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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/750,308 | 12/31/2003 | Michael O'Connor | P16604 | 9709 |
| 28062 | 7590 | 11/01/2005 | | |
| BUCKLEY, MASCHOFF, TALWALKAR LLC 5 ELM STREET NEW CANAAN, CT 06840 | | | EXAMINER MITCHELL, JAMES M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2813 | |

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/750,308

Applicant(s)

O'CONNOR ET AL.

Examiner

James M. Mitchell

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 and 16-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15 and 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to applicant's amendment filed July 29, 2005.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. (U.S. 2002/0004251) in combination with Banks (U.S. 5,919,329)

Roberts (Fig. 3- 6, 16a, 24) discloses:

(cl.1) a device comprising: semiconductor substrate (i.e. 501), a pixel cell integrated with the substrate ("LED"; 202); a light switching layer in contact with the pixel (211); a substantially transparent protective cover (401) coupled to the light switching layer; a base (603) coupled to the semiconductor substrate;

(cl.3) and the protective cover is composed of a material of a first thickness, and the base is composed of a material of substantially the first thickness (Fig. 24);

(cl. 4, 5, 11) a chip carrier (204) defining a recess, the base mounted within the recess (Fig. 3, 16a);

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(cl. 6, 12) a foot (i.e. bottom width of area recess) of the recess having a first thickness, the first thickness substantially smaller than a thickness of the combined semiconductor, pixel, and light switching layer, the cover, and the base (i.e. recess is within base);
(cl. 10, 13, 14) a heat sink (2404) coupled to the chip carrier; to a foot of recess

Roberts does not appear to explicitly disclose that the thermal expansion characteristics of the base are substantially similar to thermal expansion characteristics of the protective cover.

Banks discloses the use of the thermal expansion characteristics of a base and lid/ cover being substantially similar.

It would have been obvious to one of ordinary skill in the art to form the protective cover of Roberts with a CTE similar to that of its base in order to offset bending as taught by Banks (Col. 27, Lines 60-64; Col. 30, lines 17-24).

With respect to claim 1 that the pixel is a pixel cell array, applicant has not disclosed the array provides for new and unexpected results. As such, the duplication of the pixel in an array would have been obvious since it has been held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See e.g. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Claims 27- 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. (U.S. 2002/0004251) in combination with Banks (U.S. 5,919,329) and Rekow et al. (U.S 6,494,371).

Roberts (Fig. 3- 6,16a, 24) discloses:

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(cl.27) a device comprising: semiconductor substrate (i.e. 501), a pixel cell integrated with the substrate ("LED"; 202); a light switching layer in contact with the pixel (211); a substantially transparent protective cover (401) coupled to the light switching layer (602); a base (603) coupled to the semiconductor substrate;

(cl. 28) and chip carrier (204) defining a recess, the base mounted within the recess (Fig. 3, 16a);

(cl. 29, 30) with electrode (502) between light switching layer and protective layer.

Roberts does not appear to explicitly disclose that the thermal expansion characteristics of the base are substantially similar to thermal expansion characteristics of the protective cover or use of a ultra high pressure light source with a condenser lens and projector lens.

Banks discloses the use of the thermal expansion characteristics of a base and lid/ cover being substantially similar.

It would have been obvious to one of ordinary skill in the art to form the protective cover of Roberts with a CTE similar to that of its base in order to offset bending as taught by Banks (Col. 27, Lines 60-64; Col. 30, lines 17-24).

The modified structure of Roberts and Banks fail to show the use of a high pressure (i.e. array) with conductor and projector lens.

Rekow (Fig. 1B) shows the use of an array with projectors (40) and condensers lens (42).

It would have been obvious to one of ordinary skill in the art to incorporate an projector and condenser lens with the modified microdisplays of Roberts and Banks in order to form an illumination system as taught by Rekow (Abstract).

Claims 1, 3, 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoganandan et al. (U.S. 6,949,771).

Yogandan (Fig. 2) discloses:

(cl.1) a device comprising: semiconductor substrate), a pixel cell integrated with the substrate ("LED"; 230); alight switching layer in contact with a microdisplay comprising the pixel (240, 242); a substantially transparent protective cover (260; Col. 4, Lines 13) coupled to the light switching layer; a base/ chip carrier (210) coupled to the semiconductor substrate, wherein the thermal expansion characteristics of base are substantially similar of the protective cover (i.e. both formed of epoxy; Col. 3, Lines 29-30 & Col. 7, Lines 6-9);

(cl.3) and a portion of the protective cover is composed of a material of a first thickness, and the base is composed of a material of substantially the first thickness

(cl. 11) a chip carrier/ base (210) defining a recess, the base mounted within the recess (220);

(cl. 6, 12) a foot (i.e. bottom width of area recess) of the recess having a first thickness, the first thickness substantially smaller than a thickness of the combined (Fig. 2);

(cl. 13, 14) a heat sink coupled to the chip carrier (Col. 4, Lines 9-11) and foot f recess (i.e. underneath);

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With respect to claim 1 that the pixel is a pixel cell array, applicant has not disclosed the array provides for new and unexpected results. As such, the duplication of the pixel in an array would have been obvious since it has been held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See e.g. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoganandan et al. (U.S. 6,949,771) in combination with Rekow et al. (U.S. 6,494,371).

Yoganandan Roberts (Fig. 3- 6,16a, 24) discloses:

(cl.27) a device comprising: semiconductor substrate), a microdisplay comprising pixel cell integrated with the substrate ("LED"; 230); a light switching layer (i.e. top layer) in contact with the pixel (240, 242); a substantially transparent protective cover (260; Col. 4, Lines 13) coupled to the light switching layer; a base/carrier (210) coupled to the semiconductor substrate, wherein the thermal expansion characteristics of base are substantially similar of the protective cover (i.e. both formed of epoxy; Col. 3, Lines 29-30 & Col. 7, Lines 6-9);

(cl. 28) and chip carrier (210) defining a recess, the base mounted within the recess (Fig. 2);

(cl. 29, 30) with electrode (240) between light switching layer and protective layer.

Yogandandan does not appear to explicitly disclose the use of a high pressure (i.e. array) with conductor and projector lens.

Rekow (Fig. 1B) shows the use of an array with projectors (40) and condensers lens (42).

It would have been obvious to one of ordinary skill in the art to incorporate a projector and condenser lens with the pixel of Yoganandan in order to form an illumination system as taught by Rekow (Abstract).

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jmm
October 17, 2005

Carl Whitehead Jr.
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